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The genus *Ulesanis* (Araneae: Theridiidae) from Japan and Taiwan

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Abstract — Three species of theridiid spiders from Japan and Taiwan are transferred from *Phoroncidia* Westwood, 1835 to *Ulesanis* L. Koch, 1872: *U. pilula* (Karsch, 1879), *U. nasutus* (O. Pickard-Cambridge, 1873) and *U. ryukyuensis* (Yoshida, 1979), all with new combinations. *Ulesanis nasutus* is recorded for the first time from Japan and Taiwan and is redescribed on the basis of the material obtained from those countries. General appearances and genital organs of *U. ryukyuensis* are illustrated. Two genera, *Stegosoma* O. Pickard-Cambridge, 1873 and *Sudabe* Karsch, 1879, are newly synonymized with *Ulesanis*.

Key words — *Ulesanis, Phoroncidia*, Theridiidae, new combination, new record, Japan, Taiwan.

Introduction

The genus *Ulesanis* L. Koch, 1872 regarded as a synonym of *Phoroncidia* Westwood, 1835 for a long time (Levi & Levi 1962; Levi 1964; Yoshida 2003) was recently resurrected by Wunderlich (2008). In Japan and Taiwan, four species of the genus *Phoroncidia, P. pilula* (Karsch, 1879), *P. ryukyuensis* Yoshida, 1979, *P. altiventris* Yoshida, 1985 and *P. alishanensis* Chen, 1990, have been recorded (Karsch 1879; Yoshida 1979, 1985, 2003; Chen 1990). In this paper, two of them, *P. pilula* and *P. ryukyuensis*, are newly transferred to *Ulesanis*, while the other two species, *P. altiventris* and *P. alishanensis*, are treated as *Phoroncidia.*

In 2001, I collected two female specimens from Okinawa-jima Island, Japan, and have been identified them with *P. ryukyuensis*. In 2008, an additional female specimen was collected from Wulai, Taipei County, Taiwan. As a result of my reexamination, these females belong to the same species and are in fact regarded as *P. nasuta* (O. Pickard-Cambridge, 1873) described from Sri Lanka. In this paper, *P. nasuta* is newly transferred from *Phoroncidia* to *Ulesanis* and is redescribed. In addition, general appearances and genital organs of *P. ryukyuensis* are illustrated. Some individual and geographical variations are seen in the shape of abdomen of *P. ryukyuensis*.

Following abbreviations are used for the depositories of specimens: ASJ, Arachnological Society of Japan, Osaka; NSMT, National Museum of Nature and Science, Tokyo; OMNH, Osaka Museum of Natural History, Osaka. The specimens without indication of depository are preserved in my private collection.

Ulesanis L. Koch, 1872

Ulesanis L. Koch 1872, p. 242 (type species: *Ulesanis chelys* L. Koch, 1872); Simon 1894, p. 560; Saito 1941, p. 147; Archer 1950, p. 27.

Stegosoma O. Pickard-Cambridge 1873, p. 126 (type species: *Stegosoma testudo* O. Pickard-Cambridge, 1873), **new synonymy**

Sudabe Karsch 1879, p. 103 (type species: *Sudabe pilula* Karsch, 1879), **new synonymy**

Note. Though this genus was synonymized with *Phoroncidia* Westwood, 1835 by Levi & Levi (1962), Wunderlich (2008) resurrected it. I support Wunderlich's treatment and regard herewith *Ulesanis* L. Koch, 1872 as an independent genus. *Ulesanis* is distinguished from *Phoroncidia* by oval abdomen without spine-like projections (abdomen is relatively long and with spine-like projections in *Phoroncidia*) and short legs whose first patella and tibia 0.4–0.7 time carapace length (0.8–1.0 in *Phoroncidia*). The following three species are newly transferred from *Phoroncidia* to this genus.

Ulesanis pilula (Karsch, 1879) and *U. ryukyuensis* (Yoshida, 1979), have been recorded from Japan and Taiwan, while *U. nasutus* (O. Pickard-Cambridge, 1873) is recorded for the first time from these countries. *Ulesanis pilula* described from Japan is the type species and only a member of *Sudabe* Karsch, 1879. *Ulesanis nasutus* was described under *Stegosoma* O. Pickard-Cambridge, 1873 from Sri Lanka. The type species of *Stegosoma, S. testudo* O. Pickard-Cambridge, 1873 described from Sri Lanka, also belongs to *Ulesanis*. These only two species were recorded as *Stegosoma*. Two genera, *Stegosoma* and *Sudabe*, were synonymized with *Phoroncidia* by Levi & Levi (1962). However, I newly transfer them from the synonymies of

Phoroncidia to those of *Ulesanis*. Sclerotized abdomen without spine-like projections and short legs clearly show that *Stegosoma* and *Sudabe* are synonymies of *Ulesanis*.

This genus is mainly distributed in tropical and subtropical area of the world (Wunderlich 2009).

Ulesanis pilula (Karsch, 1879), **new combination**

[Japanese name: Tsukunegumo]

Sudabe pilula Karsch 1879, p. 63 (holotype: ♀ from Japan, W. Dönitz leg., in Zoologisches Museum an der Humboldt-Universitat zu Berlin, Germany; not examined)

Theridion pilula: Bösenberg & Strand 1906, p. 146, pl. 12, fig. 268; Saito 1941, p. 179, fig. 214.

Oronota pilula: Yaginuma 1956, p. 26; Yaginuma 1960, p. 35, pl. 7, fig. 44. (*Oronota* had been erected by Simon (1871), but it was syonymized with *Phoroncidia* by Levi & Levi (1962).)

Phoroncidia pilula: Yaginuma 1965, p. 34; Yoshida 1979, p. 46, figs. 1–3; Yaginuma 1986, p. 44, pl. 10, fig. 5, text-fig. 23–6; Chikuni 1989, p. 39, fig. 45; Zhu 1998, p. 27, fig. 11; Song et al. 1999, p. 127, fig. 66E-G; Chikuni 2008, p. 39, fig. 45; Yoshida 2009, p. 365, figs. 2-2-44-84〜85, pl. 19-9; Platnick 2010.

Gasteracantha sagaënsis Bösenberg & Strand 1906, p. 239, pl. 15, fig. 426 (holotype: ♂ from Yunohama, Saga, Japan, W. Dönitz leg.; Yaginuma (1956) synonymized with this species.).

Ulesanis sagaënsis: Kishida in Komatsu 1936, p. 88.

Specimens examined. Japan: 1♀, 1♂, 4-VII-1986, Monbetsu-shi, Hokkaido, N. Tsurusaki leg.; 1♀, 14-VII-2009, Han-ya, Mogami-machi (new record), 3♀, 10-VIII-1986, 1♀, 1♂, 30-V-1987 (NSMT), 1♀, 10♂, 1♂ juv., 30-IX-1987, Obanazawa-shi, 1♀, 16-VI-1986, 3♀ juv., 16-VIII-1986, Higashine-shi, 1♀, 6-VIII-1986, Yamagata-shi; 1♀, 10-VI-1990, 1♀, 4-V-1989, 1♀, 14-VIII-1990, Tsuruoka-shi, Yamagata Pref., H. Yoshida leg.; 1♂, 26-VII-1972, Niigata-shi, Niigata Pref., M. Ohno leg. (OMNH); 1♀, 18-V-1979, Yachimata-machi, Chiba Pref., S. Yamazaki leg.; 1♀, VIII-1951, Kitayama, Kyoto Pref., O. Sato leg. (OMNH); 3♀, 26-V-1979, Nosegaewa-mura, Nara Pref., H. Yoshida leg.; 1♂, 18-X-1976, 1♀, 20-V-1978, 1♀, 25-VI-1978, Mt. Iwawaki, Osaka Pref., H. Yoshida leg.; 1♂, 9-IV-1978, Hashimoto-shi, H. Yoshida leg., 1♂, 16-IV-1972, Shirahama,

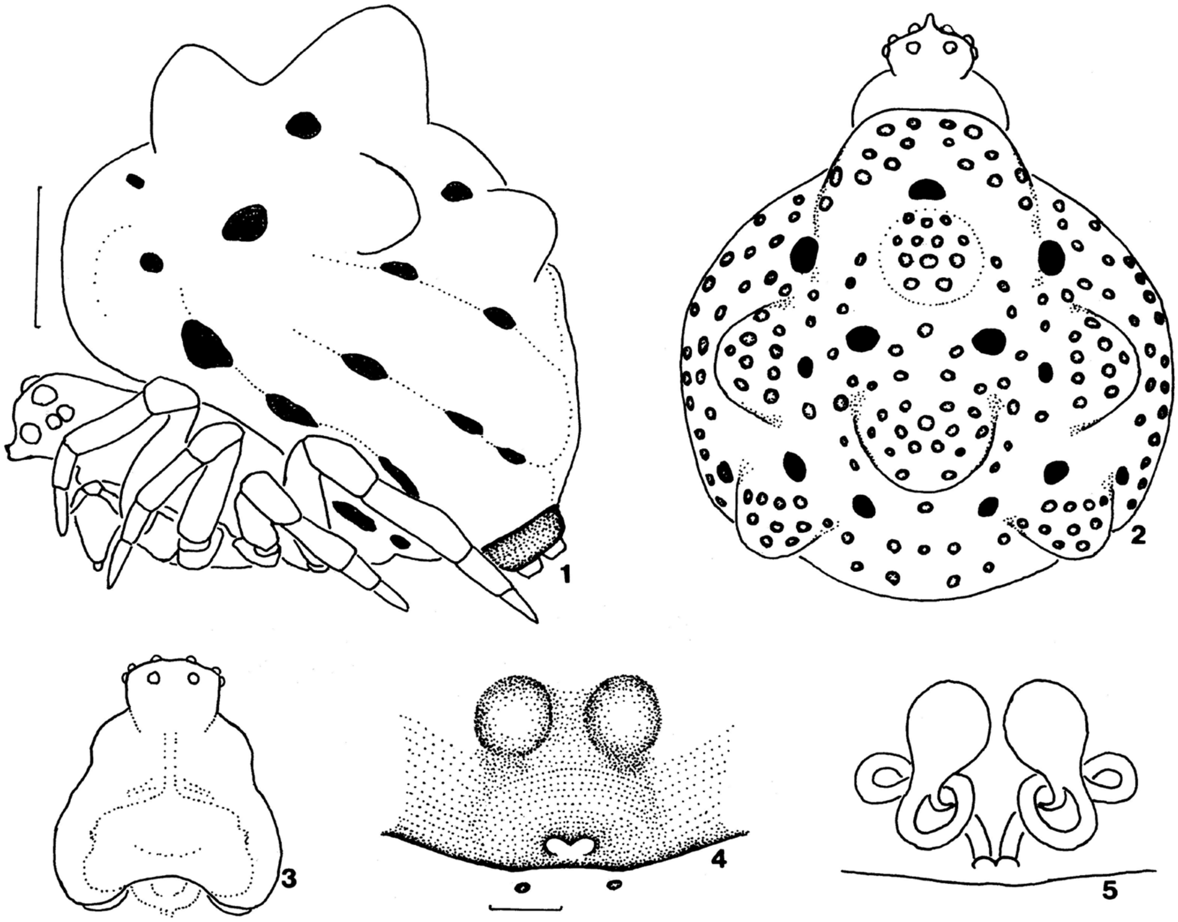

Fig. 1–5. *Ulesanis nasutus* (O. Pickard-Cambridge, 1873), ♀ (NSMT-Ar 8387) from Taipei County, Taiwan — 1, lateral view; 2, carapace and abdomen, dorsal view; 3, carapace, dorsal view; 4, epigynum, ventral view; 5, internal genitalia, dorsal view. Scales: 0.5 mm (1–3) and 0.1 mm (4–5).

Wakayama Pref., Goto leg. (OMNH); 1♂, 4-IV-1994, Matsuyama-shi, Ehime Pref., N. Tsurusaki leg.; 1♂, 2-V-1978, Fukuoka-shi, Fukuoka Pref., H. Yoshida leg.

Distribution. Japan (Hokkaido, Honshu, Shikoku and Kyushu) and China.

Ulesanis nasutus (O. Pickard-Cambridge, 1873), **new combination**

[Japanese name: Hananaga-tsukunegumo]
(Figs. 1–6)

Stegosoma nasutum O. Pickard-Cambridge 1873, p. 127, pl. 14, fig. 11 (syntypes: 1♂ & 1♀ from Sri Lanka, 1871, Thwaites leg., in Hope Department of Entomology, Oxford, England; not examined).
Phoroncidia nasuta: Platnick 2010.
Phoroncidia ryukyuensis (in part; misidentification): Yoshida 2003, p. 53, 2♀ specimens from Okinawa-jima Island, Japan.

Specimens examined (new records). Japan: 2♀, 24-VIII-2001, Sefa-utaki, Chinen-son, Okinawa-jima Island, Okinawa Pref. Taiwan: 1♀, 23-X-2008, Wulai, Taipei County (NSMT-Ar 8387). All collected by H. Yoshida.

Description. Measurements (in mm). 1♀ from Taiwan: Body length 2.16. Carapace length 1.05; width 0.79. Abdomen length 2.11; width 1.79; height 2.08. Length of legs [total (femur + patella and tibia + metatarsus + tarsus)]: I 1.65 (0.63 + 0.50 + 0.24 + 0.28); II 1.41 (0.45 + 0.47 + 0.21 + 0.28); III 1.55 (0.50 + 0.53 + 0.23 + 0.29); IV 2.16 (0.71 + 0.79 + 0.34 + 0.32). 2♀ from Okinawa: Body length 1.26, 1.42; carapace length 0.66, 0.71; abdomen length 1.24, 1.36; abdomen height 0.92, 1.11.

Female. Carapace with eye region largely projecting, and with a small projection under the anterior median eyes; thoracic part broadly attached to the abdomen (Figs. 1–3). All eyes on the projection. Diameters of anterior lateral eyes smaller than the others (4: 7). Sternum widely truncated between fourth coxae. Third and fourth coxae each with a postero-basal projection. Leg formula, 4, 1, 3, 2. Abdomen longer than wide and nearly as long as high, with two dorsal and two pairs of lateral humps; heavily sclerotized with large plates and many small spots (Figs. 1–2). Spinnerets surrounded by a sclerotized ring (Fig. 1).

Genital organ as shown in Figs. 4–5: epigastric area heavily sclerotized; epigynum with heart-shaped depression; two openings in it; seminal receptacles oval; ducts long, 8-shaped.

Two female specimens from Okinawa are smaller than that from Taiwan. Abdomen is depressed, and humps on the abdomen are relatively distinct (Fig. 6).

Coloration (Figs. 1–3). Carapace dark brown, slightly lighter in median line of cephalic region, light brown in posterior large circle of thoracic region. Chelicerae, maxillae and labium dusky brown. Sternum brown with a narrow darker border. Palpus yellowish brown. Legs: coxae, trochanters and second to fourth patellae dusky brown; femora, and second to fourth tibiae, metatarsi and tarsi,

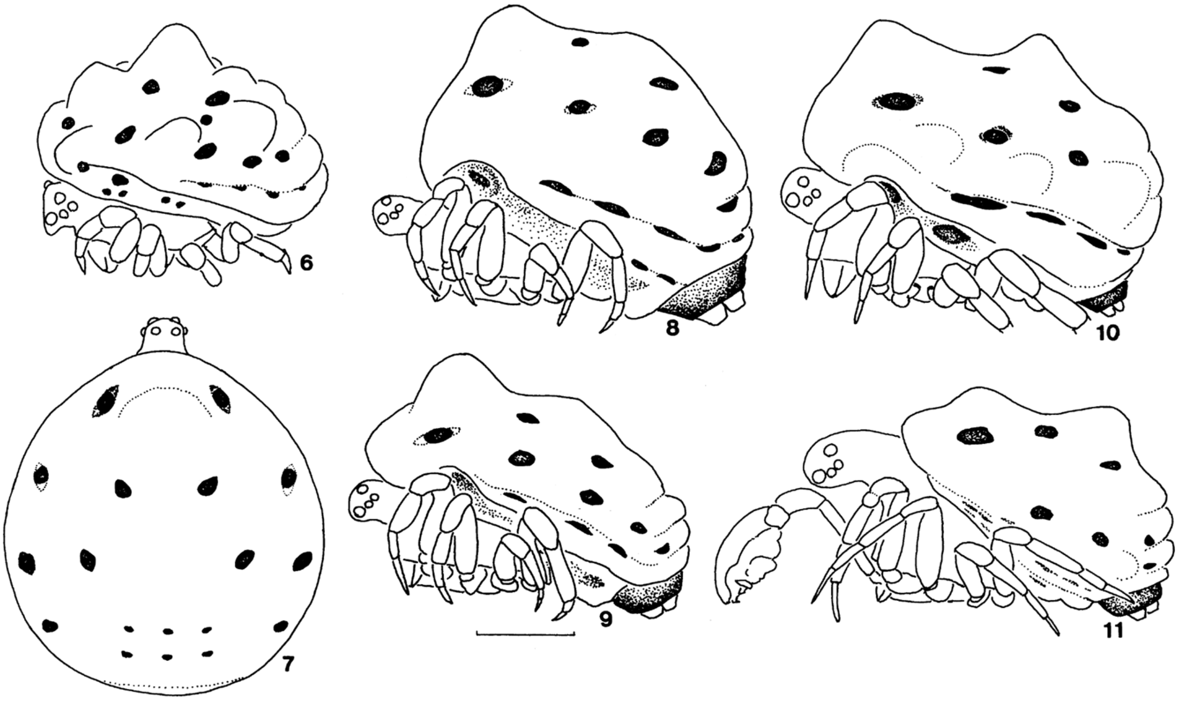

Fig. 6–11. *Ulesanis nasutus* (O. Pickard-Cambridge, 1873), ♀ (6) from Okinawa-jima Island , Japan; and *U. ryukyuensis* (Yoshida, 1979), ♀ (7–9) from Amami-Oshima Island, Japan and ♀ (10), ♂ (11) from Nantou County, Taiwan — 6, 8–11, lateral view; 7, carapace and abdomen, dorsal view. Scale: 0.5 mm.

basally yellowish brown and distally dusky brown; first patella, tibiae, metatarsi and tarsi almost yellowish brown. Abdomen covered with silver pigments inside the skin; sclerotized plates, spots and ring dusky brown.

Male. Described by O. Pickard-Cambridge (1873). Specimens are not available for the present study.

Note. This species was originally described from Sri Lanka by O. Pickard-Cambridge in 1873 and has not been recorded any other area. In this paper, I record this species for the first time from Okinawa-jima Island, Japan and Taipei County, Taiwan. Though the type specimens were not examined, a small projection under the anterior median eyes and situations of large plates on abdomen clearly show that the specimens examined in this paper belong to this species.

This species resembles *Ulesanis ryukyuensis* (Yoshida, 1979) (cf. Figs. 7–16; Yoshida 1979, figs. 7–11), but is distinguished from the latter by a small projection under the anterior median eyes, abdomen with two dorsal humps and two pairs of lateral humps, and seminal receptacles oval with 8-shaped long ducts. Situations of sclerotized large plates on abdomen are also different.

Distribution. Japan (the Nansei Islands: Okinawa-jima Island), Taiwan (Taipei County: Wulai) and Sri Lanka.

Ulesanis ryukyuensis (Yoshida, 1979), **new combination**
[Japanese name: Ryukyu-tsukunegumo]
(Figs. 7–16)

Phoroncidia ryukyuensis Yoshida 1979, p. 49, figs. 7–11 (holotype: ♀ from Amitori, Iriomote-jima Island, Okinawa Prefecture, Japan, 17-III-1977, H. Yoshida leg., in ASJ; examined); Yaginuma 1986, p. 44, text-fig. 23–7; Tanikawa 2003, p. 8, fig. 107; Yoshida 2009, p. 365, figs. 2-2-44-5, 6, 86; Platnick 2010.

Phoroncidia ryukyuensis (in part): Yoshida 2003, p. 53, figs. 112–116, specimens from Amami-Oshima, Tokunoshima, Ishigaki-jima, Iriomote-jima and Yonaguni-jima Islands, Japan and Nantou County, Taiwan.

Specimens examined. Japan (the Nansei Islands): 2♀, 1♂, 27-III-1978, 1♀, 31-III-1978, Amami-Oshima Is.; 1♀, 29-III-1978, Tokunoshima Is., Kagoshima Pref.; 1♂ (paratype ASJ), 3♂, 15-III-1977, 1♂, 3-VIII-1978, 2♀, 1♀ juv., 1♂, 1-VIII-1985 (1♀1♂ NSMT), Ishigaki-jima Is.; 1♀ (holotype ASJ), 3♀, 2♀ juv., 17-III-1977, Iriomote-jima Is.; 1♂, 30-VII-1985, Yonaguni-jima Is., Okinawa Pref. Taiwan: 1♂, 25-X-2008, Wulai, Taipei County (new record); 3♀, 2♂, 1♂ juv., 27-III-1979, Nantou County (1♀1♂ NSMT).

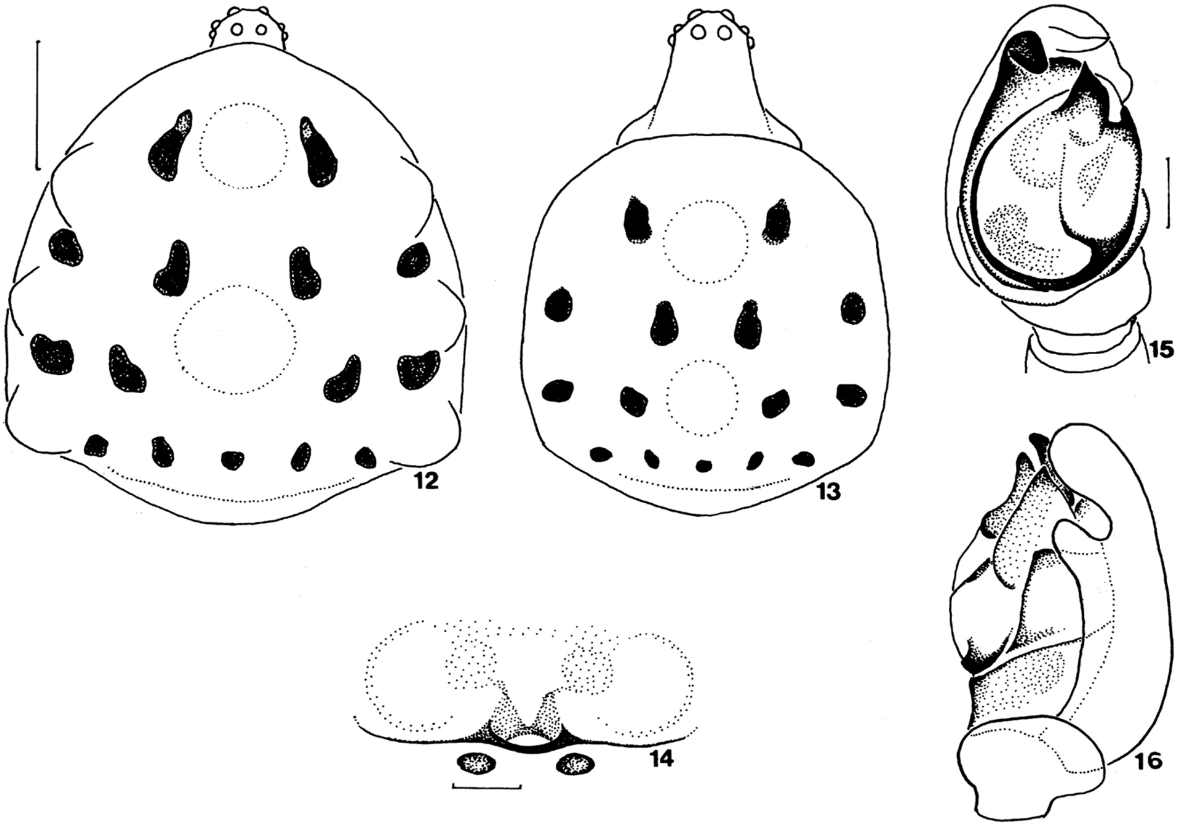

Fig. 12–16. *Ulesanis ryukyuensis* (Yoshida, 1979), ♀ (12, 14), ♂ (13, 15–16) from Nantou County, Taiwan — 12–13, carapace and abdomen, dorsal view; 14, epigynum, ventral view; 15–16, left palpus, ventral (15) and retrolateral (16) views. Scales: 0.5 mm (12–13) and 0.1 mm (14–16).

All collected by H. Yoshida.

Note. This species was originally described from the Nansei Islands, Japan (Yoshida 1979) and later it was recorded from Okinawa-jima and Yonaguni-jima Islands, Japan, and Shuishe, Nantou County, Taiwan (Yoshida 2003). An additional specimen was collected from Wulai, Taipei County in 2008. In spite of them, a record from Okinawa-jima Island was based on the misidentification with *Ulesanis nasutus* (O. Pickard-Cambridge, 1873).

Carapace and abdomen (Figs. 7–13), epigynum (Fig. 14) and male palpus (Figs. 15–16) are illustrated based on the specimens from Amami-Oshima Island, Japan and Nantou County, Taiwan. Some individual or geographical variations are seen especially in the structure of abdomen. Posterior part of abdomen from Amami-Oshima Island is round (Fig. 7), but that from Nantou County, Taiwan is nearly trapezoid (Figs. 12–13). An antero-median large hump is usually distinct, but pairs of posterior humps on female abdomen are indistinct (Figs. 7–9) or distinct (Figs. 10, 12) in some cases.

Distribution. Japan (the Nansei Islands) and Taiwan (Taipei and Nantou Counties).

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